

Non-steroidal Anti-inflammatory Drugs (NSAIDs)

Key Questions and Inclusion Criteria

Update #4

Key Questions

1. Are there differences in effectiveness between NSAIDs?
 - a. How do oral drugs compare to one another?
 - b. How do topical drugs compare to one another?
 - c. How do oral drugs compare to topical drugs?
2. Are there clinically important differences in short-term harms between NSAIDs, with or without antiulcer medication, when used for musculoskeletal pain?
 - a. How do oral drugs compare to one another?
 - b. How do topical drugs compare to one another?
 - c. How do oral drugs compare to topical drugs?
3. Are there clinically important differences in long-term harms between NSAIDs, with or without antiulcer medication, when used chronically?
 - a. How do oral drugs compare to one another?
 - b. How do topical drugs compare to one another?
 - c. How do oral drugs compare to topical drugs?
4. Are there subgroups of patients based on demographics, other medications (e.g., aspirin), or co-morbidities for which one medication is more effective or associated with fewer harms?

Inclusion Criteria

Populations: Adults with:

- Chronic pain from osteoarthritis
- Rheumatoid arthritis
- Soft-tissue pain
- Back pain
- Ankylosing spondylitis

Interventions

Oral Drugs (Trade names provided only for sole source drugs currently under patent)

- Celecoxib (Celebrex®)
- Diclofenac potassium (Voltaren Rapide 50mg sugar coated tablet,* Zipsor® 25 mg liquid filled capsules**)
- Diclofenac sodium
- Diflunisal
- Etodolac
- Fenoprofen (Nalfon® 400 mg capsules)**
- Flurbiprofen
- Ibuprofen

- Indomethacin
- Ketoprofen (Nexcede 12.5 mg oral film)
- Ketoprofen XR, ** Ketoprofen SR*
- Ketorolac
- Meclofenamate**
- Mefenamic acid
- Meloxicam
- Nabumetone
- Naproxen
- Naproxen delayed release, ** Naproxen SR*
- Naproxen sodium
- Oxaprozin
- Piroxicam
- Salsalate**
- Sulindac
- Tenoxicam*
- Tiaprofenic Acid*
- Tolmetin**

Topical Drugs (Trade names provided only for sole source drugs currently under patent)

- Diclofenac epolamine 1.3% topical patch (Flector®)**
- Diclofenac sodium 1% topical gel (Voltaren®)**
- Diclofenac sodium 1.5% topical solution (Pennsaid®)
- Diclofenac sodium 3% topical gel (Solaraze®)**
- Topical diclofenac diethylamine 1.16% (Voltaren®, Emulgen™)*

*Only available in Canada

**Not available in Canada

Effectiveness outcomes

- Pain
- Functional status
- Discontinuations due to lack of effectiveness

Harms

- Serious GI events (GI bleeding, symptomatic ulcer disease, perforation of the GI tract, and death).
- Serious cardiovascular events (myocardial infarction, angina, stroke, transient ischemic attack, cardiovascular death, hypertension, congestive heart failure, and related measures).
- Tolerability and adverse event (e.g., discontinuation due to any adverse event; any serious adverse event; the overall rate of adverse events; the rate of GI adverse events; the combined rate of adverse events related to renal and cardiovascular function, including increased creatinine, edema, hypertension, or congestive heart

failure; and the frequency of, and discontinuations due to, abnormal laboratory tests, primarily elevated transaminases)

Study designs

1. For effectiveness, controlled clinical trials and systematic reviews
2. For harms, controlled clinical trials and observational studies